AB-CO Review

Requirements for LHC Power Converter Commissioning

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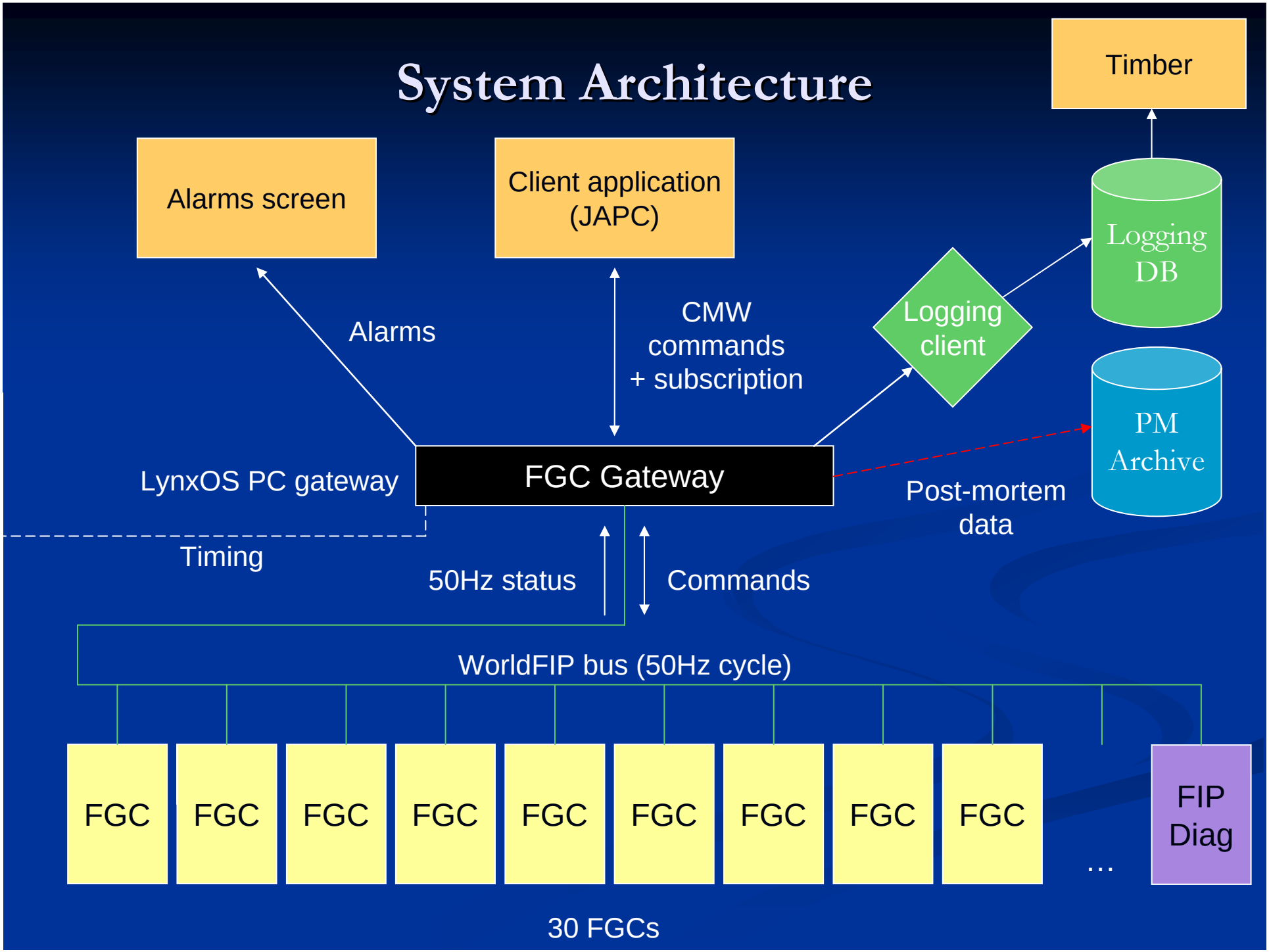
System Architecture
Timber
Alarms screen
Client application (JAPC)
Logging DB
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CMW commands + subscription
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PM Archive
LynxOS PC gateway
FGC Gateway
Post-mortem data
Timing
50Hz status
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WorldFIP bus (50Hz cycle)
FGC
FGC
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...
FIP Diag
30 FGCs

Gateway Installation

- Gateway PCs must be installed and tested prior to each series of commissioning tests
- Gateway PCs must be connected to the WorldFIP and timing networks and these connections must be validated

WorldFIP

- Connectors with appropriate addresses should be allocated to all of the converters
- The addresses for the converters must then be supplied to PO in a form that can be easily read programmatically. A database would do. So far, too much has had to be done by hand.
- Drop cables to power converters must be installed when the converters are installed in the tunnel
- A FIPDiag device must be installed (and powered) on each WorldFIP segment
- The WorldFIP segments must then be tested before being handed to PO
- Support for the FDM WorldFIP library must be provided

Timing

- A timing signal must be supplied to the timing receivers in the gateways during commissioning
- For the moment, only a GMT signal is required. For LHC we will also require timing events. These will also be required if a "global" post-mortem is ever needed during commissioning.
- At some point, we must have a timing signal supplied to our lab (866-1-C14) to develop event support

Alarms

- Alarms from the power converters and gateways must be visible on the alarm console during the short-circuit tests
- We typically define our devices in our Alarm ITN database a few weeks before each test. The Alarm Team must import them into the main LASER database before the tests actually start.
- Support must be provided during commissioning

Databases

- Over the coming months we need help and support from the Data Management section to put into place a system to manage the configuration of the power converters and inventory of assets
- As we install and commission more converters this will become more critical

Applications

- The sequencer used to run the tests must continue to evolve as the tests progress and must take into account the interlock tests and commissioning with magnets
- Fixed displays must evolve in line with operators' requirements
- The logging application must be able to record data from all power converters involved in the tests for their entire duration

Post-mortem

- The post-mortem system will be required when the power converters are connected to the magnets for circuit commissioning at the end of the year
- We are currently participating in the specification and prototyping of the system

Summary

- In general the requirements for commissioning of power converters are being fulfilled
- There must be a continuous evolution of the applications that are used during commissioning
- During the commissioning tests time is very short, so support must be provided for all of the systems involved so that any problems do not delay the progress of commissioning
- So far, progress has been quite good